

CALIFORNIA SCHOOLS

APRIL, 1962



DORMAN L. COMMONS
Member, California State
Board of Education

CALIFORNIA SCHOOLS

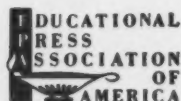
VOL. XXXIII, No. 4
APRIL, 1962

ROY E. SIMPSON
Superintendent of Public Instruction

EDITOR
IVAN R. WATERMAN
Chief, Bureau of Textbooks and Publications

Official Publication Issued
Monthly by the California
State Department of Education

Entered as second-class matter at the
Post Office at Sacramento, California.



CONTENTS

	Page
Dorman L. Commons, Biographical Sketch.....	117
Economic Education in California Public High Schools.....	118
General Fund Expenditures of California School Districts for the Fiscal Years 1959-60 and 1960-61.....	123
Business Mathematics for Secondary Schools: A Report on Workshops Held During 1961.....	137
Shorthand Courses in California High School Summer Sessions, 1961.....	142
Departmental Communications.....	145
For Your Information.....	147
Professional Literature.....	152

DORMAN L. COMMONS, MEMBER CALIFORNIA STATE BOARD OF EDUCATION

Dorman L. Commons, Vice President and Treasurer of the Douglas Oil Company of California, was appointed to the State Board of Education in February, 1962, by Governor Edmund G. Brown.

A native Californian, Mr. Commons was born in Denair, Stanislaus County, where he attended Denair Elementary School and Denair Union High School. After graduating from Modesto Junior College, he attended Stanford University, from which he received his bachelor of arts degree *cum laude* in 1940. Mr. Commons was accountant for John F. Forbes and Company in Los Angeles from 1943 to 1947. In 1947 he became controller for the Douglas Oil Company of California. At present, in addition to his position as Vice President and Treasurer of the company, he is a member of the company's Executive Committee, and the executive officer responsible for finance, accounting, transportation, and gasoline marketing.

Both Mr. Commons and his wife have been active in community affairs in Fullerton. They are the parents of four children—a daughter, Leslie, who is a senior in Sunny Hills High School; and three sons, the eldest, David, who is a sophomore in Stanford University, and Stanley and Spencer, who attend Fullerton elementary schools.

ECONOMIC EDUCATION IN CALIFORNIA PUBLIC HIGH SCHOOLS

M. CLAIRE O'BRIEN, *Consultant, Bureau of Business Education*

HERBERT D. GWINN, *Consultant, Bureau of Secondary Education*

Early in the fall of 1961, the Bureau of Secondary Education, in co-operation with both the Northern and Southern California Councils on Economic Education, conducted a survey on the current status of separate course offerings in economics in senior and four-year high schools in California.

SURVEY FINDINGS

Specifically, the principals of these high schools were asked if separate courses in economics were offered in their high schools during the school year 1960-61, and in the five-year and ten-year periods prior to 1960. Information was also solicited concerning teacher preparation, textbooks, course titles, and requirements in economics, and whether or not the school was participating in the Conservation Resource-Use Education Project of the Joint Council on Economic Education. The immediate response of the high school principals to the Bureau's urgent request for this information was highly commendable.

Replies were received from 536 senior and four-year high schools with a total student enrollment of 615,650 during the 1960-1961 school year. Of this number, 10,833 (1.76 per cent) of the students were reported as enrolled in separate economics courses which were offered by 130 (24.25 per cent) of the high schools that responded.

In response to the inquiry concerning separate economics courses offered prior to the 1960-1961 school year, 27 high schools reported that such courses had been offered five years previously, and 30 schools had offered them in 1950. In other words, 44 per cent of the reporting high schools had offered separate courses in economics prior to the 1960-1961 school year.

Of the 157 economics teachers in the high schools reporting separate courses, 49 had six or more college hours of preparation in economics; 47 had 12 or more hours; 27 had 18 or more hours; and 34 had 24 or more hours.

The schools were asked to report the titles of the economics textbooks they used. The response showed that there were 23 different economics textbooks in use with a frequency range from one to 26. However, 72 per cent of the high schools reported a preference for the

following six textbooks: *Economics for Our Times*¹ (26 high schools); *Today's Economics*² (21 high schools); *Consumer Economic Problems*³ (16 high schools); *Economics and You*⁴ (11 high schools); *Applied Economics*⁵ (10 high schools); and *Our American Economy*⁶ (10 high schools).

Although there were 11 different course titles reported, 79 high schools (61 per cent) used the concise title, "Economics." The remaining high schools prefixed this title with the following designations: consumer, business, fundamental, elementary, applied, introduction to, and classical.

In reporting the requirement status of their economics courses, 23 per cent of the high schools stated that such courses were required of all students; 8 per cent required them only for some students; and 69 per cent reported them as elective.

NATIONAL TASK FORCE ON ECONOMIC EDUCATION

In July, 1960, the American Economic Association, in response to national concern over lack of understanding the American economy on the part of high school and college students, invited five of the nation's outstanding economists and two leading secondary educators to serve on a National Task Force on Economic Education. The main objective of the study undertaken by the Task Force was to determine the minimum understanding of economics essential for good citizenship and attainable by high school students, and to provide helpful guidelines for high school teachers, administrators, and school boards. The study was financed by the Committee for Economic Development.

The report of the Task Force contains findings that are being sent to high school teachers and school board members throughout the United States. In order to improve the teaching of economics in the schools, the Task Force recommends the following:

That at least a one year college course in economics be required for certification of all new social studies and business education teachers.

That school boards and administrators consider this certification requirement as a minimum, and that in addition wherever feasible at least a minor in economics (usually 18 units) be required for those teaching special high school courses in economics.

That in all large high schools there be at least one teacher with a college major in economics, both to teach in the area and to advise other teachers who lack adequate preparation in economics.

To strengthen the economic competence of present teachers, we urge increased use of summer workshops and that schools reward participation in such

¹ Augustus H. Smith and Emile Benoit. *Economics for Our Times*. New York: McGraw Hill Book Co., Inc., 1959.

² Kennard E. Goodman and William L. Moore. *Today's Economics*. Boston: Ginn & Co., 1960.

³ W. Harmon Wilson and Elvin S. Eyster. *Consumer Economic Problems*. Cincinnati, Ohio: South-Western Publishing Co., 1956.

⁴ Sol Holt. *Economics and You*. New York: Charles Scribner's Sons, 1956.

⁵ James Harvey Dodd. *Applied Economics*. Cincinnati, Ohio: South-Western Publishing Co., 1956.

⁶ Richard W. Lindholm and Paul Driscoll. *Our American Economy*. New York: Harcourt, Brace & Co., 1959.

workshops; that school administrators encourage their social studies teachers to participate fully in the nation-wide television course in economics now being planned for high school teachers in 1962-63; and that, wherever possible, teachers return to college for additional work in economics.

That colleges preparing teachers improve the courses in economics they offer for potential teachers; that they recognize the special problems of present teachers who have had no economics; and that they consider establishment of extension courses, special centers, and workshops designed to aid such teachers.⁷

ECONOMIC EDUCATION IN BUSINESS AND SOCIAL SCIENCE COURSES

For the past several years many California high schools have included selected content on economics in one or more of the several curriculums as a result of the efforts of the Joint Council on Economic Education and its regional counterparts in Northern and Southern California. These groups, in co-operation with selected teacher training institutions, have sponsored many summer workshops for teachers, and have been instrumental in bringing about an increased production of usable instructional materials in the field of economics.

Business education and social science at the high school level are particularly adaptable to the inclusion of instruction about economics and the American economic system. Business education teachers should develop economic understandings, participate in teaching courses in economics, and co-operate in team teaching projects with social science teachers. Resource materials that suggest methods of including economic understandings in business education programs have appeared in many articles in professional magazines and in yearbooks of business education associations.

The Policies Commission for Business and Economic Education, sponsored by the United Business Education Association and by Delta Pi Epsilon, a national honorary fraternity for graduate students in business education, has prepared two documents concerning the importance of economic understandings in business education programs. The first of these, *A Proposal for Business-Economic Education for American Secondary Schools*, addressed to school administrators, emphasizes the importance of providing opportunities for all students to study business-economic problems and suggests the desirability of involving business education teachers in teaching courses in economics. The second, *This We Believe About Business Education in the High School*, states that business education has an important contribution to make to the economic literacy of every high school student and that special effort should be made to apply economic understandings to all business subjects.

The National Education Association Project on the Academically Talented Student has co-operated with the United Business Education Association in developing a publication, *Business and Economic Educa-*

⁷ *Economic Education in the Schools*. Summary of the Report of the National Task Force on Economic Education. New York: Committee for Economic Development, 1961, p. 14.

tion, which suggests methods of including economic understandings in the program of academically talented students.

A national workshop in economics for business education was held in 1960 at Montclair State College, New Jersey, to provide materials for the use of business education teachers, to emphasize the importance of introducing economic understandings in all business education courses, and to explore methods for teaching such understandings.

Social science teachers, because of their concern with and legal responsibility for providing instruction about American institutions, should devote an appropriate amount of instructional time to the American economic system.

In the report of the State Central Committee on Social Studies to the California State Curriculum Commission it is recommended that the social studies content for grades nine or ten include study of conflicting world forces and ideologies. Two areas of emphasis proposed for grade eleven deal with the growth of our industrial economy and current issues related to the effectiveness of the American economic system. A suggested twelfth grade course, related to government in the United States and problems in American life, deals with our economic problems and the workings of our free enterprise system.

IN-SERVICE TRAINING FOR TEACHERS

An outstanding in-service training opportunity via television will be launched at the beginning of the 1962-1963 school year in addition to summer workshops and other in-service training opportunities in economics that will continue to be provided.

It has been recognized that one of the problems in improving economic education is that most teachers upon whom the job falls have had little or no formal training in economics. In an attempt to overcome this problem, a two-semester course, "The American Economy," will be presented on the "College of the Air," a CBS network program. This course, which has been planned by the Learning Resource Institute and the members of the National Task Force on Economic Education, will be directed by John R. Coleman, Head of the Department of Economics at the Graduate School of Industrial Administration at Carnegie Institute of Technology, and will emphasize instructional materials, demonstration of classroom methods, and the placement of economics in the curriculum. The course will be telecast in 160 half-hour lecture-demonstrations over a period of 32 weeks, and college credit may be obtained.

Information on education in economics, and assistance in this field for teachers and administrators in California may be obtained from the Northern California Council on Economic Education, San Francisco State College, San Francisco; and from the Southern California Council on Economic Education, Los Angeles State College, Los Angeles.

The following sources may be used to secure further information regarding economic education.

- American Capitalism: An Introduction for Young Citizens.* Prepared by the Council for the Advancement of Secondary Education of the National Association of Secondary-School Principals, a department of the National Education Association. Washington 6, D.C.: Council for the Advancement of Secondary Education, 1958. Pp. 116.
- Annotated Bibliography of Materials in Economic Education, 1961-62.* New York 36, N.Y.: Joint Council on Economic Education, 1961. Pp. 68.
- Business and Economic Education for the Academically Talented Student.* Edited by MILTON C. OLSON and EUGENE L. SWEARINGEN for the National Education Association Project on the Academically Talented Student and the United Business Education Association, a department of the National Education Association. Washington 6, D.C.: Published jointly by the Project and the United Business Education Association, 1961. Pp. 80.
- CALDERWOOD, JAMES D. *International Economic Problems.* Economic Series 2—Secondary. Minneapolis: Curriculum Resources, Inc., 1961. Pp. 72.
- Capitalism and Other Economic Systems.* Prepared by the Council for the Advancement of Secondary Education of the National Association of Secondary-School Principals, a department of the National Education Association. Washington 6, D.C.: Council for the Advancement of Secondary Education, 1959. Pp. 122.
- Economic Education in the Schools: A Report of the National Task Force on Economic Education, September, 1961.* Washington 6, D.C.: Committee for Economic Development, 1961. Pp. 88.
- Educating for Economic Competence.* A Report Prepared by the Commission on Education for Economic Competence, Association for Supervision and Curriculum Development, a department of the National Education Association. Washington 6, D.C.: Association for Supervision and Curriculum Development, 1960. Pp. 78.
- Money and Banking in the American Economy.* Prepared by the Council for the Advancement of Secondary Education of the National Association of Secondary-School Principals, a department of the National Education Association. Washington 6, D.C.: Council for the Advancement of Secondary Education, 1960. Pp. 104.
- 100 Selected Films in Economic Education.* New York 36, N.Y.: Joint Council on Economic Education, 1960. Pp. 34.
- Study Materials for Economic Education in the Schools.* Report of the Materials Evaluation Committee. Sponsored by the Committee for Economic Development and the Joint Council on Economic Education. New York 22, N.Y.: Committee for Economic Development, 1961. Pp. 48.
- Suggestions for a Basic Economics Library for Secondary Schools.* New York 36, N.Y.: Joint Council on Economic Education, 1960. Pp. 16.
- This We Believe About Business Education.* Prepared by the Policies Commission for Business and Economic Education. Sponsored by the United Business Education (NEA) and Delta Pi Epsilon. Washington 6, D.C.: Policies Commission for Business and Economic Education, 1961. Pp. 12.
- TRAYWICK, LELAND E. *Business Ups and Downs.* Economic Series 1—Secondary. Minneapolis: Curriculum Resources, Inc., 1961. Pp. 84.

GENERAL FUND EXPENDITURES OF CALIFORNIA SCHOOL DISTRICTS FOR THE FISCAL YEARS 1959-60 and 1960-61

EDWIN H. HARPER, *Chief, Bureau of School Apportionments and Reports, and*
DOROTHY KIRSCHMAN, *Accounting Technician*

The general fund expenditures of the public schools maintained in California school districts for the fiscal years 1959-60 and 1960-61 have been compiled from annual financial reports provided by the county superintendents of schools. The tables on the following pages present an analysis of general fund expenditures of school districts, showing the total amount, the amount per pupil in average daily attendance, and per cents of the total amount expended for each of ten major classes of expenditure and for certain required subordinate classes of expenditure listed in the *California School Accounting Manual*.¹ Tables 2 through 6 also show the debt service payments from the general fund relating to the annual repayments to the state on account of apportionments to school districts under the State School Building Aid Program. Minor amounts are shown for the payments required of school districts for the acquisition of property included in territory annexed to the districts or formed into new districts. Per cents are expressed in two ways—in terms of total expenditures and in terms of the current expense of education.² The latter method is the one more commonly used.

The expenditures included in this analysis are those made from the general funds of school districts. The analysis does not include transfers to other school districts nor expenditures of other funds of school districts. The expenditures of county superintendents of schools, including those for maintenance of emergency schools and other special schools and classes, are omitted, and the average daily attendance in such schools and classes has not been employed in the computation of expenditures per unit of average daily attendance in these tables.

Expenditures shown under Class 2—Instruction, are shown for the year 1960-61 for the first time by separate required subordinate accounts. The subordinate accounts for certificated salaries of instruction depict the salaries of classroom teachers—Class 2a3—Teachers' Salaries, separate

¹ *California School Accounting Manual*. Bulletin of the California State Department of Education, Vol. XX, No. 2, March, 1951 (revised edition), pp. 8-10.

² The term "current expense of education" is employed here to designate expenditures of classes 1 to 7, inclusive, excluding Class 8—Food Service, Class 9—Community Services, Class 10—Capital Outlay. Use of the term is advised in the *California School Accounting Manual*, p. 9.

from those of principals, supervisors, and other certificated salaries of instruction.³

Expenditures shown under Class 8—Food Service, represent only the expenditures from general funds of school districts for this purpose and do not include the expenditures for food service purposes made from cafeteria funds and cafeteria accounts of school districts.

Expenditures shown under Class 10—Capital Outlay, represent only the expenditures from general funds of school districts for land, improvement of grounds, buildings, and equipment. The amounts expended for books are shown separately from the expenditures made for other items of equipment. These data do not include expenditures for these purposes from building or special funds.

Table 1 shows average daily attendance by grade level in elementary school districts, high school districts, junior college districts, and unified

TABLE 1
AVERAGE DAILY ATTENDANCE IN CALIFORNIA PUBLIC SCHOOLS BY
JURISDICTION AND BY DISTRICT LEVEL OR GRADE
SPAN, 1959-60 and 1960-61

Jurisdiction	Grade span	1959-60	1960-61
In classes under jurisdiction of			
1. Elementary school districts.....	K-8	1,591,254	1,601,298
2. High school districts.....	7-14	719,877	756,635
3. Junior college districts.....	13-14	97,858	109,485
4. Unified school districts.....	K-14	944,244	1,086,261
5. Total all school districts.....		3,353,233	3,553,679
In classes under jurisdiction of county superintendents of schools, paid for from			
County school tuition fund			
6. Elementary.....	1-8	12	18
7. High school.....	9-12	87	64
County school service fund			
8. Elementary.....	1-8	5,247	5,433
9. High school.....	9-12	3,332	3,484
10. Total in classes under jurisdiction of county superintendents of schools.....		8,678	8,999
11. Grand total.....		3,361,911	*3,562,678

* The State School Fund apportionment a.d.a. of 3,562,681 differs from the a.d.a. for cost purposes because of the application of the provisions of Education Code Section 11254.

³ Refer to Education Code Section 17200 (enacted by the Statutes of 1959, Chapter 1607).

school districts, with consolidated totals for all districts. Average daily attendance credited to county school funds is given separately to permit reconciliation with state totals employed for apportionment of the State School Fund.

Tables 2 through 5 present, respectively, the expenditures of elementary school districts, high school districts, junior college districts, and unified school districts.

The expenditures per unit of average daily attendance⁴ for grades 7 and 8 in junior high schools maintained by high school districts and for junior colleges maintained by high school districts are shown in Table 3, pages 128-29.

The expenditures per unit of average daily attendance in elementary schools, junior high schools, high schools, and junior colleges, as maintained by unified school districts, are shown in Table 5, pages 132-33.

Table 6, pages 134-35, contains comparable data for all California school districts in consolidated totals.

Table 7, page 136, summarizes the amount and per cent of increase in total and per-pupil current expense of education and in average daily attendance, comparing the fiscal years 1959-60 with 1958-59, and 1960-61 with 1959-60.

In Table 8, page 136, the total average daily attendance, total current expense of education, and per-pupil current expense of education are presented for a ten-year period beginning with the fiscal year 1951-52, and ending with the fiscal year 1960-61.

During the fiscal year 1951-52, the total average daily attendance credited to all school districts was 1,901,549, and the total current expense was \$507,311,228.51. Over a ten-year period the average daily attendance increased in the amount of 1,652,130, or 86.9 per cent, and the total current expense of education increased \$1,010,872,800.70, or 199.26 per cent.

The current expense of education per unit of average daily attendance for all school districts in 1951-52 was \$266.79. In 1960-61, this unit expense had increased to \$427.21. The increase over the ten-year period was \$160.42, or 60.13 per cent.

⁴ Average daily attendance in grades 7 and 8 in junior high schools maintained by high school districts is credited to elementary school districts of residence for the computation of basic state aid and state equalization aid in the apportionment of the State School Fund; however, in this report the a.d.a. of such grades are used in computing the expenditures of the high school districts per unit of a.d.a., since the junior high schools are maintained by the high school districts and the expenditures for educating the pupils in grades 7 and 8 of the junior high schools are paid from the general funds of the high school districts. Likewise, the a.d.a. of junior college students is credited to the districts of residence for the apportionment of state aid, but included in this report with the district of attendance.

TABLE 2
TOTAL AND PER-PUPIL EXPENDITURES BY CLASS OF EXPENDITURE, AND PER CENT DEVOTED TO
EACH CLASS OF EXPENDITURE, IN CALIFORNIA ELEMENTARY SCHOOL DISTRICTS FROM
GENERAL FUNDS ONLY, 1959-60 and 1960-61

Classification of expenditures	1959-60			1960-61		
	Amount of expenditures		Per cent	Amount of expenditures		Per cent
	Total	Per unit of average daily attendance ¹	Of total expenditures	Total	Per unit of average daily attendance ¹	Of total expenditures
1—Administration.....	\$22,800,944.66	\$14.33	3.97	\$24,176,473.51	\$15.10	4.01
2—Instruction.....						
a. Certificated salaries of instruction:						
1. Principals' salaries.....				29,444,405.02	18.39	4.89
2. Supervisors' salaries.....				8,878,122.29	5.54	1.47
3. Teachers' salaries.....				343,348,590.11	214.42	56.96
4. Other certificated salaries of instruction.....				3,448,548.70	2.15	0.57
5. Total certificated salaries of instruction.....	361,951,823.00	227.46	63.06	385,119,666.12	240.50	63.89
b. Other salaries of instruction.....	14,954,470.11	9.40	2.61	16,127,515.45	10.07	2.68
c. Other expenses of instruction:						
1. Textbooks.....	1,210,199.12	0.76	0.21	1,017,105.71	0.64	0.17
2. Other books.....	2,034,157.80	1.28	0.35	2,133,859.11	1.33	0.35
3. Other expense.....	16,620,016.63	10.44	2.90	17,124,922.03	10.69	2.84
4. Total other expense of instruction.....	19,864,373.55	12.48	3.46	20,275,886.85	12.66	3.36
d. Total instruction.....	\$396,770,666.66	\$249.34	69.13	\$421,523,068.42	\$263.23	69.93
3—Auxiliary services.....	10,760,323.36	6.76	1.88	11,354,026.96	7.09	1.88
4—Operation of school plant.....	51,568,952.27	32.41	8.99	53,993,447.22	33.72	8.96
5—Maintenance of school plant.....	19,129,052.49	12.02	3.33	19,843,108.90	12.39	3.29

6—Fixed charges.....	25,140,173.33	15.80	4.38	4.63	27,342,752.45	17.08	4.54	4.75
7—Transportation of pupils.....	16,943,809.38	10.65	2.95	3.12	17,199,686.56	10.74	2.85	2.99
Total current expense of education.....	\$543,113,922.15	\$341.31	94.63	100.00	\$575,432,564.02	\$359.35	95.46	100.00
8—Food service.....	3,069,466.90	1.93	0.53		2,999,402.42	1.87	0.50	
9—Community services.....	4,640,957.13	2.92	0.81		4,983,993.13	3.11	0.82	
10—Capital outlay.....								
a. Land.....	1,994,676.77	1.25	0.35		1,159,199.03	0.72	0.19	
b. Improvement of grounds.....	3,299,507.91	2.07	0.57		2,636,362.62	1.65	0.44	
c. Building.....	7,168,141.68	4.51	1.25		6,267,827.24	3.92	1.04	
d. Equipment.....								
1. Books.....	749,137.68	0.47	0.13		834,377.60	0.52	0.14	
2. Other equipment.....	9,925,538.48	6.24	1.73		8,485,166.68	5.30	1.41	
3. Total equipment.....	10,674,676.16	6.71	1.86		9,319,544.28	5.82	1.55	
e. Total capital outlay.....	\$23,137,002.52	\$14.54	4.03		\$19,382,933.17	\$12.11	3.22	
Total expenditures.....	\$573,961,348.70	\$360.70	100.00		\$602,798,892.74	\$376.44	100.00	
Debt service								
1. Annual repayment on account of public school building fund apportionment (E.C. Sec. 19436).....	\$8,944,063.87				\$8,924,254.67			
2. Annual repayment on account of state school building fund apportionment (E.C. Sec. 19611).....	2,427,737.76				2,550,465.47			
3. Payment to original district for acquisition of property under Education Code Section 1615.....					27,194.00			
Total debt service.....	\$11,371,801.63				\$11,501,914.14			
Total, expenditures and debt service.....	\$585,333,150.33				\$614,300,806.88			

¹ See Table 1, line 1, for divisors employed in computing expenditures per unit of a.d.a.

TABLE 3
TOTAL AND PER-PUPIL EXPENDITURES BY CLASS OF EXPENDITURE, AND PER CENT DEVOTED TO
EACH CLASS OF EXPENDITURE, IN CALIFORNIA HIGH SCHOOL DISTRICTS FROM
GENERAL FUNDS ONLY, 1959-60 and 1960-61

Classification of expenditures	1959-60				1960-61			
	Amount of expenditures		Per cent		Amount of expenditures		Per cent	
	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education
1—Administration.....	\$13,776,386.10	\$19.14	3.42	3.69	\$14,684,713.50	\$19.41	3.38	3.60
2—Instruction.....								
a. Certificated salaries of instruction:								
1. Principals' salaries.....					16,538,493.86	21.86	3.81	4.06
2. Supervisors' salaries.....					4,977,671.86	6.58	1.14	1.22
3. Teachers' salaries.....					217,256,058.06	287.13	50.06	53.28
4. Other certificated salaries of instruction.....					16,398,562.14	21.67	3.77	4.02
b. Total certificated salaries of instruction.....	231,378,981.59	321.42	57.37	61.88	255,170,785.92	337.24	58.78	62.58
c. Other expenses of instruction:	13,996,081.44	19.44	3.47	3.74	15,739,946.26	20.80	3.63	3.86
1. Textbooks.....	3,769,613.77	5.23	0.93	1.01	3,817,850.67	5.05	0.88	0.94
2. Other books.....	1,528,007.11	2.12	0.38	0.41	1,817,853.01	2.40	0.44	0.44
3. Other expense.....	14,234,320.83	19.78	3.53	3.80	14,508,617.64	19.17	3.34	3.56
4. Total other expense of instruction.....	19,531,941.71	27.13	4.84	5.22	20,144,312.32	26.62	4.64	4.94
d. Total instruction.....	\$264,907,004.74	\$367.99	65.68	70.84	\$291,055,053.50	\$384.66	67.05	71.38
3—Auxiliary services.....	8,431,851.61	11.71	2.09	2.26	9,119,544.86	12.05	2.10	2.24
4—Operation of school plant.....	38,051,860.57	52.86	9.44	10.18	40,755,470.21	53.87	9.39	10.00
5—Maintenance of school plant.....	18,286,709.60	25.40	4.53	4.89	19,461,958.10	25.72	4.49	4.77

6—Fixed charges.....	20,161,326.69	28.01	5.00	5.39	22,198,177.52	29.34	5.12	5.44
7—Transportation of pupils.....	10,291,015.83	14.29	2.55	2.75	10,484,065.04	13.86	2.42	2.57
Total current expense of education.....	\$373,906,155.14	\$519.40	92.71	100.00	\$407,758,982.73	\$538.91	93.95	100.00
8—Food service.....	1,075,825.77	1.50	0.27		1,009,797.56	1.33	0.23	
9—Community services.....	3,807,363.30	5.29	0.94		3,814,341.30	5.04	0.88	
10—Capital outlay.....								
a. Land.....	2,984,909.70	4.15	0.74		1,453,491.34	1.92	0.34	
b. Improvement of grounds.....	3,011,990.84	4.18	0.75		3,080,939.06	4.07	0.71	
c. Building.....	8,000,301.68	11.11	1.98		7,161,749.76	9.47	1.65	
d. Equipment.....								
1. Books.....	430,671.28	0.60	0.11		649,695.72	0.86	0.15	
2. Other equipment.....	10,085,924.96	14.01	2.50		9,071,900.00	11.99	2.09	
3. Total equipment.....	10,516,596.24	14.61	2.61		9,721,595.72	12.85	2.24	
e. Total capital outlay.....	\$24,513,798.46	\$34.05	6.08		\$21,417,775.88	\$28.31	4.94	
Total expenditures.....	\$403,303,142.67	\$560.24	100.00		\$434,000,897.47	\$573.59	100.00	
Debt service.....								
1. Annual repayment on account of public school building fund apportionment (E.C. Sec. 19436).....	\$1,286,827.52				\$1,199,245.87			
2. Annual repayment on account of state school building fund apportionment (E.C. Sec. 19611).....	1,970,597.07				1,775,437.98			
3. Payment to original district for acquisition of property under Education Code Section 1615.....	--				--			
Total debt service.....	\$3,257,424.59				\$2,974,683.85			
Total, expenditures and debt service.....	\$406,560,567.26				\$436,975,581.32			

¹ See Table 1, line 2, for divisors employed in computing expenditures per unit of a.d.a.

TABLE 4
TOTAL AND PER-PUPIL EXPENDITURES BY CLASS OF EXPENDITURE, AND PER CENT DEVOTED TO
EACH CLASS OF EXPENDITURE, IN CALIFORNIA JUNIOR COLLEGE DISTRICTS FROM
GENERAL FUNDS ONLY, 1959-60 and 1960-61

Classification of expenditures	1959-60				1960-61			
	Amount of expenditures		Per cent		Amount of expenditures		Per cent	
	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education
1—Administration.....	\$2,814,684.74	\$28.76	4.35	5.00	\$3,314,019.25	30.27	4.73	5.32
2—Instruction.....								
a. Certificated salaries of instruction:								
1. Principals' salaries.....					1,898,986.22	17.34	2.71	3.05
2. Supervisors' salaries.....					2,190,386.18	20.01	3.13	3.52
3. Teachers' salaries.....					30,413,286.13	277.78	43.42	48.85
4. Other certificated salaries of instruction.....					2,518,863.68	23.01	3.59	4.05
5. Total certificated salaries of instruction.....	33,492,040.43	342.25	51.72	59.49	37,021,522.21	338.14	52.85	59.47
b. Other salaries of instruction.....	4,707,758.20	48.11	7.27	8.36	5,357,331.14	48.93	7.65	8.61
c. Other expenses of instruction:								
1. Textbooks.....	2,930.04	0.03	0.00	0.01	64,075.05	0.59	0.09	0.10
2. Other books.....	273,777.31	2.80	0.42	0.49	311,838.99	2.85	0.45	0.50
3. Other expense.....	2,432,652.75	24.86	3.76	4.32	2,573,164.62	23.50	3.67	4.14
4. Total other expense of instruction.....	2,709,360.10	27.69	4.18	4.82	2,949,078.66	26.94	4.21	4.74
d. Total instruction.....	\$40,909,158.73	\$418.05	63.17	72.67	\$45,327,932.01	\$414.01	64.71	72.82
3—Auxiliary services.....	641,999.20	6.56	0.99	1.14	757,780.11	6.92	1.08	1.21
4—Operation of school plant.....	5,496,539.72	56.17	8.49	9.76	6,047,143.57	55.23	8.64	9.71
5—Maintenance of school plant.....	2,679,777.85	27.38	4.14	4.76	2,821,821.94	25.78	4.03	4.53

TABLE 5

TOTAL AND PER-PUPIL EXPENDITURES BY CLASS OF EXPENDITURE, AND PER CENT DEVOTED TO
EACH CLASS OF EXPENDITURE, IN CALIFORNIA UNIFIED SCHOOL DISTRICTS FROM
GENERAL FUNDS ONLY, 1959-60 and 1960-61

Classification of expenditures	1959-60				1960-61			
	Amount of expenditures		Per cent		Amount of expenditures		Per cent	
	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education
1—Administration.....	\$13,365,335.70	\$14.16	3.21	3.35	\$16,096,382.08	\$14.82	3.27	3.40
2—Instruction.....								
a. Certificated salaries of instruction:								
1. Principals' salaries.....					24,121,959.18	22.21	4.90	5.10
2. Supervisors' salaries.....					5,509,363.38	5.07	1.12	1.17
3. Teachers' salaries.....					270,517,721.62	249.03	54.97	57.22
4. Other certificated salaries of instruction.....					11,749,252.61	10.82	2.39	2.49
5. Total certificated salaries of instruction.....	263,429,547.63	278.99	63.30	65.98	311,898,296.79	287.13	63.38	65.98
b. Other salaries of instruction.....	14,494,390.04	15.35	3.48	3.63	17,666,271.05	16.26	3.59	3.73
c. Other expenses of instruction:								
1. Textbooks.....	1,954,755.88	2.07	0.47	0.49	2,233,818.69	2.06	0.46	0.47
2. Other books.....	1,703,706.65	1.80	0.41	0.43	2,022,949.94	1.86	0.41	0.43
3. Other expense.....	12,717,038.43	13.47	3.06	3.18	14,829,236.43	13.65	3.01	3.14
4. Total other expense of instruction.....	16,375,500.96	17.34	3.94	4.10	19,086,005.06	17.57	3.88	4.04
d. Total instruction.....	\$294,299,438.63	\$311.68	70.72	73.71	\$348,650,572.90	\$320.96	70.85	73.75
3—Auxiliary services.....	9,464,741.17	10.02	2.27	2.37	11,567,829.83	10.65	2.35	2.45
4—Operation of school plant.....	39,187,575.73	41.50	9.42	9.82	45,703,212.09	42.07	9.29	9.67
5—Maintenance of school plant.....	16,045,170.39	16.99	3.86	4.02	18,439,210.62	16.98	3.75	3.90

6—Fixed charges.....	20,655,661.92	21.88	4.96	5.17	22.39	4.94	5.15
7—Transportation of pupils.....	6,223,070.92	6.59	1.50	1.56	7.33	1.61	1.68
Total current expense of education.....	\$399,240,994.46	\$422.82	95.94	100.00	\$435.20	96.06	100.00
8—Food service.....	1,012,270.70	1.07	0.24		0.91	0.20	
9—Community services.....	2,782,470.85	2.94	0.67		3.11	0.69	
10—Capital outlay.....							
a. Land.....	752,314.70	0.80	0.18		1.32	0.29	
b. Improvement of grounds.....	1,447,871.42	1.53	0.35		1.70	0.38	
c. Building.....	4,639,569.31	4.91	1.11		4.20	0.92	
d. Equipment.....							
1. Books.....	188,494.97	0.20	0.05		0.44	0.10	
2. Other equipment.....	6,093,871.62	6.46	1.46		6.17	1.36	
3. Total equipment.....	6,282,366.59	6.66	1.51		6.61	1.46	
c. Total capital outlay.....	\$13,122,122.02	\$13.90	3.15		\$13.83	3.05	
Total expenditures.....	\$416,157,858.03	\$440.73	100.00		\$453.05	100.00	
Debt service.....							
1. Annual repayment on account of public school building fund apportionment (E.C. Sec. 19436).....	\$1,617,540.89				\$2,255,634.72		
2. Annual repayment on account of state school building fund apportionment (E.C. Sec. 19611).....	453,791.56				1,239,182.32		
3. Payment to original district for acquisition of property under Education Code Section 1615.....	--				10,621.24		
Total debt service.....	\$2,071,332.45				\$3,505,438.28		
Total, expenditures and debt service.....	\$418,229,190.48				\$495,636,189.91		

¹ See Table 1, line 4, for divisors employed in computing expenditures per unit of a.d.a.

TABLE 6
TOTAL AND PER-PUPIL EXPENDITURES BY CLASS OF EXPENDITURE, AND PER CENT DEVOTED TO
EACH CLASS OF EXPENDITURE, IN ALL CALIFORNIA SCHOOL DISTRICTS FROM
GENERAL FUNDS ONLY, 1959-60 and 1960-61

Classification of expenditures	1959-60				1960-61			
	Amount of expenditures		Per cent		Amount of expenditures		Per cent	
	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education	Total	Per unit of average daily attendance ¹	Of total expenditures	Of total current expense of education
1—Administration.....	\$52,757,351.20	\$15.73	3.62	3.84	\$58,271,588.34	\$16.40	3.64	3.84
2—Instruction.....								
a. Certificated salaries of instruction:								
1. Principals' salaries.....					72,003,844.28	20.26	4.50	4.74
2. Supervisors' salaries.....					21,555,543.71	6.07	1.35	1.42
3. Teachers' salaries.....					861,535,655.92	242.43	53.88	56.75
4. Other certificated salaries of instruction.....					34,115,227.13	9.60	2.14	2.25
b. Total certificated salaries of instruction.....	890,252,392.65	265.49	61.05	64.86	989,210,271.04	278.36	61.87	65.16
c. Other salaries of instruction.....	48,152,699.79	14.36	3.30	3.51	54,891,063.90	15.45	3.43	3.61
d. Other expenses of instruction:								
1. Textbooks.....	6,937,498.81	2.07	0.47	0.51	7,132,850.12	2.00	0.45	0.47
2. Other books.....	5,539,648.87	1.65	0.38	0.40	6,286,501.05	1.77	0.39	0.41
3. Other expense.....	46,004,028.64	13.72	3.16	3.35	49,035,940.72	13.80	3.07	3.23
e. Total other expense of instruction.....	58,481,176.32	17.44	4.01	4.26	62,455,291.89	17.57	3.91	4.11
f. Total instruction.....	\$996,886,268.76	\$297.29	68.36	72.63	\$1,106,556,626.83	\$311.38	69.21	72.88
3—Auxiliary services.....	29,298,915.34	8.74	2.01	2.13	32,799,181.76	9.23	2.05	2.16
4—Operation of school plant.....	134,304,928.29	40.05	9.21	9.79	146,499,273.09	41.22	9.16	9.65
5—Maintenance of school plant.....	56,140,710.33	16.74	3.85	4.09	60,566,099.56	17.04	3.79	3.99

6—Fixed charges.....	69,263,417.42	20.66	4.75	5.05	77,366,553.66	21.77	4.84	5.10
7—Transportation of pupils.....	33,909,311.39	10.11	2.33	2.47	36,124,705.97	10.17	2.26	2.38
Total current expense of education.....	\$1,372,560,902.73	\$409.32	94.13	100.00	\$1,518,184,029.21	\$427.21	94.95	100.00
8—Food service.....	5,230,288.24	1.56	0.36		5,088,804.90	1.43	0.31	
9—Community services.....	11,554,196.26	3.45	0.79		12,628,858.23	3.56	0.79	
10—Capital outlay.....								
a. Land.....	7,446,625.73	2.22	0.51		4,661,902.10	1.31	0.29	
b. Improvement of grounds.....	8,547,101.08	2.55	0.59		8,608,521.76	2.42	0.54	
c. Building.....	23,694,626.57	7.07	1.62		22,011,565.63	6.20	1.38	
d. Equipment.....								
1. Books.....	1,472,007.28	0.44	0.10		2,131,826.52	0.60	0.13	
2. Other equipment.....	27,675,124.95	8.25	1.90		25,662,872.87	7.22	1.61	
3. Total equipment.....	29,147,132.23	8.69	2.00		27,794,699.39	7.82	1.74	
e. Total capital outlay.....	\$68,835,485.61	\$20.53	4.72		\$63,076,688.88	\$17.75	3.95	
Total expenditures.....	\$1,458,180,872.84	\$434.86	100.00		\$1,598,978,381.22	\$449.95	100.00	
Debt service.....								
1. Annual repayment on account of public school building fund apportionment (E.C. Sec. 19436).....	\$11,848,432.28				\$12,379,135.26			
2. Annual repayment on account of state school building fund apportionment (E.C. Sec. 19611).....	4,852,126.39				5,565,085.77			
3. Payment to original district for acquisition of property under Education Code Section 1615.....	--				37,815.24			
Total debt service.....	\$16,700,558.67				\$17,982,036.27			
Total, expenditures and debt service.....	\$1,474,881,431.51				\$1,616,960,417.49			

* See Table 1, line 5, for divisors employed in computing expenditures per unit of a.d.a.

TABLE 7

AMOUNT AND PER CENT OF INCREASE IN TOTAL CURRENT EXPENSE OF EDUCATION,
AVERAGE DAILY ATTENDANCE, AND CURRENT EXPENSE PER UNIT OF AVERAGE
DAILY ATTENDANCE IN CALIFORNIA SCHOOL DISTRICTS, 1959-60
OVER 1958-59, AND 1960-61 OVER 1959-60

	Increase 1959-60 over 1958-59		Increase 1960-61 over 1959-60	
	Total	Per cent	Total	Per cent
A. Increase in total current expense of education				
1. Elementary school districts.....	\$58,178,322.15	12.00	\$32,318,641.87	5.95
2. High school districts.....	46,105,017.11	14.06	33,852,827.59	9.05
3. Junior college districts.....	6,315,881.28	12.64	5,956,377.80	10.58
4. Unified school districts.....	44,518,008.91	12.55	73,495,279.22	18.41
All school districts.....	\$155,117,229.45	12.74	\$145,623,126.48	10.61
B. Increase in a. d. a.				
1. Elementary school districts.....	104,976	7.06	10,044	0.63
2. High school districts.....	51,516	7.71	36,758	5.10
3. Junior college districts.....	1,831	1.91	11,627	11.88
4. Unified school districts.....	47,604	5.31	142,017	15.04
All school districts.....	205,927	6.54	200,446	5.98
C. Increase in current expense of education per unit of a.d.a.				
1. Elementary school districts.....	\$15.03	4.61	\$18.04	5.29
2. High school districts.....	28.94	5.90	19.51	3.76
3. Junior college districts.....	54.80	10.53	-6.69	-1.16
4. Unified school districts.....	27.21	6.88	12.38	2.93
All school districts.....	\$22.50	5.82	\$17.89	4.37

TABLE 8

TOTAL AVERAGE DAILY ATTENDANCE AND PER-PUPIL CURRENT
EXPENSE OF EDUCATION IN ALL CALIFORNIA SCHOOL DISTRICTS
FROM GENERAL FUNDS FOR THE PAST TEN FISCAL YEARS

Fiscal year	Average daily attendance	Current expense of education	
		Amount	Per unit of a.d.a.
1951-52.....	1,901,549	\$507,311,228.51	\$266.79
1952-53.....	2,032,947	580,249,176.08	285.42
1953-54.....	2,203,398	674,596,851.22	306.16
1954-55.....	2,375,681	742,158,443.35	312.40
1955-56.....	2,546,281	823,046,067.33	323.23
1956-57.....	2,744,355	950,214,459.93	346.24
1957-58.....	2,950,705	1,100,347,464.71	372.91
1958-59.....	3,147,306	1,217,443,673.28	386.82
1959-60.....	3,353,233	1,372,560,902.73	409.32
1960-61.....	3,553,679	1,518,184,029.21	427.21

BUSINESS MATHEMATICS FOR SECONDARY SCHOOLS:

A Report on Workshops Held During 1961

GERALD D. CRESCI, *Researcher and Trainer, Bureau of Business Education*¹

During the summer of 1961, the Bureau of Business Education of the California State Department of Education conducted workshops on mathematics in the secondary schools at Sacramento State College, San Francisco State College, and the University of California, Los Angeles. These workshops were a part of a project that was begun in 1959, and was financed with funds made available under Title III of the National Defense Education Act of 1958.

The workshops at Sacramento State College and at the University of California, Los Angeles, were conducted for teachers of business and mathematics. The San Francisco State College workshop was conducted for secondary school administrators, supervisors, curriculum directors, and business and mathematics department chairmen.

WORKSHOP OBJECTIVES

The objectives of the workshops were to bring the attention of secondary school personnel to (1) a report on the changing nature of the applications of mathematics to business problems and recent studies of mathematics instruction in secondary schools; (2) evaluate secondary school programs in mathematics as they relate to business; and (3) ways and means of meeting the demand for greater mathematical knowledge through secondary school mathematics programs.

The project co-ordinators and staffs for each of the workshops are listed as follows:

Sacramento State College Workshop

Willard M. Thompson, *Project Co-ordinator*, Associate Professor of Business Administration, Sacramento State College

H. Stewart Moredock, Professor of Mathematics and Chairman, Division of Science and Mathematics, Sacramento State College

F. Blair Mayne, Executive Dean and Professor of Business Administration, Sacramento State College

Charles C. Smith, Associate Professor of Business Administration, Sacramento State College

Robert D. Anglim, Mathematics Instructor, Campos Verdes Junior High School, North Highlands (Grant Union High School District)

George F. Robison, Jr., Mathematics Instructor, C. K. McClatchy High School, Sacramento Unified School District

San Francisco State College Workshop

William Winnet, *Project Co-ordinator*, Associate Professor of Business, San Francisco State College

Ralph M. Lakness, Associate Professor of Mathematics and Head, Department of Mathematics, San Francisco State College

Jack D. Wilson, Associate Professor of Mathematics, San Francisco State College

Frank J. Williams, Professor of Business, San Francisco State College

¹ Appointed Consultant in Junior College Education, March 1, 1962.

University of California, Los Angeles, Workshop

Clifford Bell, *Project Co-ordinator*, Professor of Mathematics and Chairman, Department of Physical Sciences, University Extension, University of California, Los Angeles

Kenneth C. Skeen, Chairman, Mathematics Department, Diablo Valley College, Concord (Contra Costa Junior College District)

RECOMMENDATIONS

Participants in the workshop at Sacramento State College made the following recommendations:

1. Business mathematics should not be used as a substitute for general or remedial mathematics.
2. Business mathematics should be taught to students by members of the business department who are well-qualified to teach the subject.
3. The objectives of business mathematics courses should be to teach students (a) the concepts and procedures that they will most likely use in business careers; and (b) the concepts they need as consumers.
4. Saturday workshops should be conducted so that more business teachers can become aware of (a) recent developments in mathematics; (b) the relationship of mathematics to the over-all curriculum; (c) the needs of students for training in higher mathematics; and (d) how mathematics is used in making business management decisions.

Participants in the workshop at San Francisco State College made comments and recommendations in relation to (1) high school students who may major in business management in college; (2) terminal business majors in high school; and (3) remedial and low-ability business students in high school.

The following comments and recommendations were made regarding high school students who are potential college business management majors:

1. Since the over-all curriculum is in a state of flux and may be changed within the next five years in all grades, one through fourteen, these changes will affect the high school programs of students who are potential college business management majors. The development of a college preparatory business education major for high school students should therefore be the concern of high school administrators.
2. A study of consumer economics should be incorporated in the seventh and eighth grade curriculum.
3. A variety of problems both written and oral, which provide alternate methods of arriving at solutions, should be included in mathematics classes.

4. College-bound students should be given guidance in enrolling for college entrance courses—three years of mathematics, the minimum requirement, and four years, recommended.
5. Resource materials that show how mathematics can be applied to the solving of business problems should be developed and distributed to mathematics teachers and business mathematics teachers.
6. A business mathematics course should be offered in the senior year or last semester of high school. A suggested title for this course would be "Mathematics Used in the Analysis of Business Problems." The course would include the gathering, statistical treatment, graphing, and analyzing of data. Team teaching methods should be used to teach this course with the team consisting of teachers from both the business and mathematics departments. The course could be the culmination of a series of offerings in various business and mathematics subject matter areas.
7. Incorporation of suitable business applications in the present mathematics program might stimulate the interest of students and provide an intellectual challenge.
8. Mathematics departments in the colleges should be encouraged to include more mathematics applications in courses for secondary teacher training programs.
9. Counselors in high schools should be provided with information about the need for more college preparatory mathematics for high school students.
10. Better communication regarding the needs of students for mathematics study should be developed between all levels of education as well as with the community. Advisory committees consisting of representatives from education, business, industry, and labor should be organized to keep the community informed regarding these needs and the programs offered in mathematics in the secondary schools. Joint department meetings should be held for business and mathematics teachers so that appropriate resource materials may be exchanged. Workshops should be held for the purpose of writing syllabi to be used in business mathematics programs, and these programs should be constantly revised and re-evaluated. Business curriculums should include courses in economics, business law, and mathematics analysis for business.

The following comments and recommendations were made regarding terminal business majors in high school:

1. Since school district and state course requirements for all business students have to be met, one year of business mathematics is probably all that can be included in a terminal curriculum for business

majors in high school. However, mathematics would be an integral part of all the other required business courses.

2. Since consumer mathematics is taught in many high school courses such as homemaking, general business, and general mathematics, the one year of business mathematics could be called "Distributive Mathematics," and would include practical problems used in business transactions by manufacturers and merchants.
3. The prerequisite for the one-year business mathematics course would be satisfactory achievement in junior high school mathematics. The course should be taught by a person whose background is equivalent to that of a business major. The personnel of the mathematics department should serve as consultants in the development of this business mathematics course.
4. Rotary calculators should be available for student use in the business mathematics course, and the mathematical concepts involved in calculating processes should be taught.
5. The mathematical concepts that would be offered in the terminal business mathematics course would include a fundamental review of: ratio and proportion and other number systems involved in understanding the decimal system; per cent problems related to installment buying, interest rates, and partial measures; estimates or approximations, using the slide rule and other computational tools; stocks and bonds; profit distribution; social security and income taxes; denominate numbers and square root; business graphs and the use of co-ordinates; fundamentals of algebra; and special applications of mathematics to military tactics, probability and game theory, and linear programing.
6. Teachers can make the business mathematics program more meaningful to students by presenting materials and data on such things as payroll cards, installment buying prices, lumber lists, and bank statements obtained from merchants.

The following comments, recommendations, and inquiries were made regarding students with low ability and students who need remedial work in business mathematics programs in high schools:

1. It is recommended that acceptable definitions of the "low ability" student and the "student who needs remedial work" be established. What is business mathematics? What kind of mathematics will be needed ten years from now in business, and what role will the low ability student have in the business world?
2. Students should be taught to understand the basic fundamentals in arithmetic before they proceed to the application of mathematics in business.

3. There is a need for ability grouping in business mathematics classes. Provision should be made for mobility between groupings so that the needs of all students can be met.
4. Small classes in business mathematics are recommended for slow learners so that individual instruction may be provided.
5. The business mathematics materials used in instruction should be commensurate with the reading level of the students. Examples and applications used in the business mathematics class should be appropriate to the level of understanding of the students.
6. Educators who are responsible for developing the content of business mathematics courses should be certain that business applications are up-to-date and that these applications can be understood by the students.
7. A study should be conducted to determine the possibility of utilizing team teaching techniques in business mathematics classes.
8. The training of business and mathematics teachers should include the new instructional content and methods used in both business and mathematics. As an example, funds from the National Science Foundation program should be made available to improve the business and mathematical background of teachers who are responsible for teaching business mathematics.
9. Funds should be made available to develop the recommendations listed here.

Participants in the workshop at the University of California at Los Angeles did not prepare recommendations because most of their efforts were directed toward reviewing and gathering material for a future publication on the application of mathematics to business in the secondary school curriculum.

SHORTHAND COURSES IN CALIFORNIA HIGH SCHOOL SUMMER SESSIONS, 1961

M. CLAIRE O'BRIEN, *Consultant in Business Education*

The Bureau of Business Education conducted a study recently to obtain information regarding the shorthand courses that were offered during the summer of 1961 in California public high schools. Questionnaires, including items to be answered by students or teachers, were sent to the 43 school districts maintaining high schools that had reported on Bureau of Secondary Education summer session application forms that they would be offering summer session shorthand classes.

A total of 31 school districts, 72 per cent of the districts to which the questionnaires were sent, responded. Four of these 31 school districts did not offer classes in shorthand, because enrollments were not adequate; and 27 enrolled 929 students in 38 shorthand courses.

STUDENT RESPONSES

The 929 students in the summer session shorthand courses were asked why they had enrolled, and 905 responded as follows: 263, or 29.1 per cent, took shorthand for vocational use; 575, or 63.5 per cent, took it for personal use; and 67, or 7.4 per cent, took the course for review purposes.

Table 1 shows the reasons given by 810 of the students for enrolling in summer session shorthand courses.

TABLE 1
REASONS GIVEN BY STUDENTS FOR ENROLLING IN
1961 SUMMER SESSION SHORTHAND COURSES

Reasons for enrolling	Number of students responding	Per cent of students responding
Scheduling difficulty in regular session---	161	19.9
Course not offered in regular session-----	276	34.1
Other-----	373	46.0
Total-----	810	100.0

A total of 247, or 30 per cent of the 820 students who responded, were planning to enroll in shorthand classes in the fall semester, 1961.

Table 2 shows the grades in which 616 of the summer session shorthand students expected to be enrolled in the fall of 1961.

TABLE 2
GRADES IN WHICH SUMMER SESSION SHORTHAND
STUDENTS WOULD BE ENROLLED, FALL, 1961

Grade	Number of students responding	Per cent of students responding
9	11	1.8
10	89	14.5
11	175	28.4
12	299	48.5
12+	42	6.8
Total.....	616	100.0

SUMMER SESSION ORGANIZATION

The length of the summer sessions conducted by the school districts ranged from four and one-half to eight weeks. The majority of the school districts conducted six-week sessions.

Table 3 shows the number of school districts conducting shorthand courses according to the duration of their summer sessions. All shorthand classes were conducted for two hours a day.

TABLE 3
NUMBER OF SCHOOL DISTRICTS CONDUCTING SHORTHAND CLASSES
AND THE DURATION OF THEIR SUMMER SESSIONS

Number of school districts	Number of weeks in summer session
1	4½
15	6
1	6½
6	7
4	8
Total.....27	

Follow-up studies of the students who were enrolled in the 1961 summer shorthand classes were planned by 16 of the 27 school districts that responded to the questionnaire.

METHODS OF INSTRUCTION

Most of the teachers in the summer session shorthand courses made extensive use of tape recorders, phonographs, and other devices for class and individual practice in taking dictation and making notes. Some teachers used tachistoscopes and controlled readers as a means of increasing the shorthand competency of students.

In classes where the personal use of shorthand was the major objective, the lecture method was used extensively as a means of teaching students to take notes rather than record the lecture verbatim. Some teachers made tape recordings of speeches viewed on television or heard on radio, and used these tapes in the classroom.

The other activities in which students participated included taking notes on their reading, preparing bibliography cards, preparing original drafts of term papers by using shorthand, and typing the final drafts of term papers.

EVALUATION BY TEACHERS

Most of the teachers of summer session shorthand courses reported that the students who worked hard and practiced regularly achieved satisfactory shorthand proficiency. In the opinion of the teachers, those students who enrolled in shorthand courses for personal use achieved sufficient skill to use shorthand in preparing for their studies and completing their assignments.

Although many students who enrolled in summer session shorthand courses for vocational reasons did as well as students in regular sessions, teachers reported that it was the above-average student who received the higher grades. Teachers also reported that because the summer session shorthand review classes were more successful than the beginning classes, summer session students should be very carefully selected for the beginning shorthand courses.

Departmental Communications

OFFICE OF THE SUPERINTENDENT OF PUBLIC INSTRUCTION

ROY E. SIMPSON, *Superintendent*

APPOINTMENTS TO STAFF

EDWIN H. HARPER was appointed Chief of the Bureau of School Apportionments and Reports, March 1, 1962. Since 1957, Mr. Harper has been Field Representative, School Administration, Bureau of Administrative Services, and he has been working with the Accounting Committee of the California Association of School Business Officials in developing the recently published 1961 edition of the *California School Accounting Manual*. In Siskiyou County, from 1949 to 1957, he was Superintendent of the Etna Union Elementary School District, Superintendent of the Etna Union High School District, and Principal of the Etna Union High School. His experience also includes teaching science and mathematics. Mr. Harper received his bachelor of arts degree from San Jose State College, and his master of arts degree from Stanford University.

GERALD D. CRESCI was appointed Consultant in Junior College Education, Bureau of Junior College Education, March 1, 1962. Mr. Cresci has been Researcher and Teacher Trainer in the Bureau of Business Education since 1958, and has directed the Bureau's project on business mathematics instruction in the secondary schools. Before coming to the State Department of Education, Mr. Cresci taught at City College of San Francisco, in other schools in the San Francisco Unified School District, and in the Oakland Unified School District. He received his bachelor of science degree and his master of arts degree from the University of San Francisco, and is now completing his work for a doctorate in education from the University of California, Los Angeles.

EMERGENCY REGULATIONS ADOPTED BY SUPERINTENDENT OF PUBLIC INSTRUCTION

Excess Expense for Special Educational Programs for Mentally Gifted Minors. The Superintendent of Public Instruction, acting under the authority of subdivision (a) of Education Code Section 6433, and implementing Education Code Sections 6426 and 6427, added Section 199.14 to Article 23 of Subchapter 1 of Chapter 1 of Title 5 of the

California Administrative Code, relating to excess expense for special educational programs for mentally gifted minors, and adopted these as emergency regulations to read as follows (effective February 1, 1962):

199.14 *Excess Expense. Definition.* (a) "Excess expense" for special educational programs for mentally gifted minors is the current expense of "Instruction," "Pupil Transportation," and "Fixed Charges," as defined in the October 1961 Bulletin of the California State Department of Education entitled *California School Accounting Manual*, incurred solely for providing the special program. The expense shall be readily identifiable in the accounting records of the district.

(b) The expense incurred shall be on account of and because of a transaction which can be verified as being directly related to pupils enrolled during the fiscal year in the special program and which would not have occurred had the program not been initiated.

(c) The expenses of "Instruction," "Pupil Transportation," and "Fixed Charges" used as a basis for computing allowances shall be reported in compliance with instructions on forms prescribed and furnished by the Superintendent of Public Instruction and shall be subject to the approval of the Superintendent of Public Instruction.

(d) Current expenses of "Instruction," as defined in this article, include expenses for the following purposes: identification of pupils; individual counseling with pupils and/or parents; special consultant services; special instructional materials; special instructional services; in-service education for teachers; textbooks and other books; special tutoring service; other purposes as approved by the Superintendent of Public Instruction.

BUREAU OF SECONDARY EDUCATION

FRANK B. LINDSAY, *Chief*

OPEN VERSUS CLOSED CAMPUS POLICY IN CALIFORNIA HIGH SCHOOLS

Many school administrators are concerned about lunch hour activities that can lead to fatal accidents and to other incidents inimical to student welfare when students are free to leave the high school campus without supervision. Most school administrators recognize that such unfortunate incidents, which also contribute to the deterioration of public relations, can be prevented by employing either the closed or modified open campus policy now employed by schools that enroll more than 80 per cent of the high school students in California.

The seriousness of the situation that is being created by schools with open campus lunch hour policies prompted the Superintendent of Public Instruction Roy E. Simpson to issue a statement in October, 1961, in which he emphasized the urgency for governing boards of schools that have open campus lunch hour policies to consider the advisability of adopting closed campus policies. In his statement Dr. Simpson called attention to Section 63 of Title 5 of the California Administrative Code, which states that "no pupil shall be permitted to leave school at recess, or at any other time before the regular hour for closing school, except in case of emergency, or with the approval of the principal of the school."

For Your Information

STATE BOARD OF EDUCATION ACTIONS

The following actions were taken by the State Board of Education at its regular meeting held in San Diego, February 8, 1962.

Approval of Organizations for School District Membership

In accordance with Education Code Section 1131, the Board approved the following organizations for which membership may be paid from funds of school districts or offices of county superintendents of schools for the school years, 1961-62, 1962-63, and 1963-64, subject, however, to the organization notifying the Department of Education immediately, whenever there is a change in the bylaws, charter, constitution, or purposes of the organization, and subject further to withdrawal of approval by the State Board of Education at its discretion subsequent to such a change.

Approved for membership by county superintendents of schools

California School Employees' Association¹

President: Lewis G. McCall, 1015 West 23rd Street, Merced, California

Executive Director: Richard C. Bartlett

Secretary: Nell Porter, 152 Follett Street, Richmond, California

Headquarters address: 1705 Murchison Drive, Burlingame, California

Approved for membership by schools

National Commission on Accrediting²

President: John S. Millis, President, Western Reserve University, Cleveland, Ohio

Vice President: Elmer Ellis, President, University of Missouri, Columbia, Missouri

Secretary-Treasurer: Thomas C. Mendenhall, President, Smith College, Northampton, Massachusetts

Headquarters address: 1785 Massachusetts Avenue, N.W., Washington 6, D.C.

Western Association of Schools and Colleges

President: George C. S. Benson, President, Claremont Men's College, Claremont, California

Secretary-Treasurer: Mitchell P. Biggs

Headquarters address: 1710 North Van Ness, Fresno 4, California

Approval of Proposals for School District Organization Changes

In accordance with the provisions of Chapter 9 of Division 5 of the Education Code (Section 3151), the Board approved the following proposals regarding changes in school district organization:

Formation of a unified school district in Riverside County—A proposal by the Riverside County Committee on School District Organization that an election be held to determine whether the voters in the territory of the Banning Elementary School District wish to form a unified school district.

¹ Approved for the school years, 1962-63, 1963-64, and 1964-65.

² Approved only for membership by junior colleges that belong to any of the associations listed in the commission's constitution, paragraph 2b, including the American Association of Junior Colleges.

Formation of a unified school district in San Diego County—A proposal by the San Diego County Committee on School District Organization that an election be held to determine whether the voters in the area of the Poway Union Elementary School District wish to form a unified school district.

In accordance with the provisions of Chapter 9 of Division 5 of the Education Code (Section 3152), the Board approved the following proposal regarding a change in school district organization:

Annexation of an elementary school district to a joint union elementary school district in Yuba County—A proposal by the Yuba County Committee on School District Organization that an election be held to determine whether the voters in the Hansonville Elementary School District wish to annex their school district to the Yuba-Feather Joint Union Elementary School District.

Changes in Rules and Regulations

Summer Schools Conducted by School Districts. The Board, acting under the authority of and implementing Education Code Sections 152, 5554, 5720, 5752, and 6358, amended Sections 8 and 120, repealed Article 13.5 (Sections 116, 116.1, and 117), and added Article 13.5 (Sections 116, 116.1, 116.2, 116.3, and 117) to Subchapter 1 of Chapter 1 of Title 5 of the California Administrative Code, relating to summer schools conducted by school districts, to read as follows (effective March 25, 1962):

8. (d) In the case of pupils enrolled in a summer school maintained by any school district, if the summer school has the prior written approval of the Superintendent of Public Instruction and during the time the summer school is otherwise in full compliance with Education Code Section 5554, 5720, or 5752, as applicable.

Article 13.5. Summer Schools Other than Classes for Adults, Evening High Schools, and Evening Junior Colleges

116. *Application of Article.* This article applies to all summer schools except classes for adults, evening high schools, and evening junior colleges.

116.1. *Approval Required.* (a) Summer schools may be established by the governing board of any school district with the prior written approval of the State Superintendent of Public Instruction.

(b) The application for approval shall be submitted on forms prescribed and furnished by the State Superintendent of Public Instruction, and shall designate persons who will exercise administrative or supervisory responsibilities for the summer school.

(c) The completed application shall be submitted on or before May 1 preceding the period during which the summer school is to be maintained.

116.2. *Courses Authorized.* A summer school shall include only the subjects authorized in the courses of study by the authorities having power to prescribe the courses of study for the school.

116.3. *Level of Difficulty.* A subject which was taught to pupils in regular classes of the district during the preceding school term or terms shall, when offered to comparable summer school pupils, be of the same level of difficulty.

117. *Time and Duration.* (a) Summer schools shall meet the following time requirement including recesses and passing time and excluding noon intermissions:

- | | |
|-------------------------------|---|
| (1) Elementary (grades 1-8) | Not less than 200 minutes per day for 5 days per week for not less than 4 consecutive weeks |
| (2) High School (grades 7-12) | Not less than 240 minutes per day for not less than 5 days per week for not less than 6 consecutive weeks |

- (3) Junior Colleges (grades 13-14) Not less than 3 class hours per day for not less than 5 days per week for not less than 6 consecutive weeks or for not less than an equivalent total time for the summer school

Exemptions from these provisions may be made by the Superintendent of Public Instruction upon a petition submitted to him by the district upon forms prescribed by the Superintendent. The bases for the exemption shall be agricultural labor factors, climatic conditions, specialized educational programs, or other conditions appearing to the Superintendent of Public Instruction to warrant exemption.

(b) For the purposes of this section, "four consecutive weeks" means 20 consecutive teaching days, including holidays designated in Education Code Section 5201 other than Saturday and Sunday.

"Six consecutive weeks" means 30 consecutive teaching days, including holidays designated in Education Code Section 5201 other than Saturday and Sunday, except that if classes which by statute may be held on Saturday are so held, the term means 36 consecutive teaching days other than Sunday.

120. (c) Each evening school and each class for adults to be conducted between the close of one academic year and the beginning of another academic year may be established by the governing board only with the prior written approval of the Superintendent of Public Instruction. Application for such approval made on forms prescribed and furnished by the Superintendent of Public Instruction shall be submitted on or before May 1 preceding the period during which the evening school or class for adults is to be maintained.

Credentials for Public School Service. The Board, acting under the authority of and implementing Education Code Sections 152 and 13193 (added by Chapter 1787, Statutes of 1961), added Subchapter 3.1 (Sections 712 and 713) to Chapter 1 of Title 5 of the California Administrative Code, relating to credentials for public school service, and adopted these as emergency regulations to read as follows (effective March 6, 1962):

SUBCHAPTER 3.1. STANDARD CREDENTIALS FOR PUBLIC SCHOOL SERVICE

Article 4. Standard Teaching Credential With a Specialization in Junior College Teaching

712. *Persons Enrolled on September 30, 1961.* Any person who on September 30, 1961, had completed two years of college and was on September 30, 1961, enrolled in a teacher education curriculum at any institution of higher learning approved by the State Board of Education, or who prior to that date had completed the statutory requirements for the junior college credential and the additional requirements of the State Board of Education with respect thereto, each of which was in effect on September 14, 1961, may qualify on or before September 1, 1964, for a standard teaching credential with a specialization in junior college teaching by complying with the procedure prescribed for application (Section 201) and completing, as a part of or in addition to the requirements of Education Code Section 13193, a program including the following minimum requirements:

- (a) An earned master's or doctor's degree.
- (b) Ten semester hours of professional work in education including:
 - (1) A course dealing with the aims, scope, and desirable outcomes of the junior college or of other secondary school.
 - (2) Directed teaching, four semester hours, or the equivalent as provided in Section 711(a).
- (c) The completion of a course or the passing of an examination on the provisions and principles of the Constitution of the United States as prescribed in Section 201(h).

(d) One teaching major and one teaching minor. A teaching major consists of not less than twenty-four semester hours of work at least twelve of which are upper division or graduate courses. A teaching minor consists of not less than twelve semester hours of work, at least six of which are upper division or graduate courses.

713. *Term.* The standard teaching credential with a specialization in junior college teaching which authorizes service prior to July 1, 1963, shall be valid to that date and for such further period, including the life of the holder, as the law on that date may provide. The holder of the credential on or after July 1, 1963, may, if he so desires, submit the credential to the Commission of Credentials for designation thereon of such further period of validity.

The standard teaching credential with a specialization in junior college teaching issued after June 30, 1963, is valid during the life of the person to whom issued unless sooner suspended or revoked, except that a credential issued pursuant to Section 13197.3 shall be valid for the period designated by the State Board of Education in accordance with such section.

Revocation of Credentials for Public School Service

The Board revoked the credentials, life diplomas, and other documents for public school service heretofore issued to the following persons:

<i>Name</i>	<i>Date of birth</i>	<i>Revocation effective</i>	<i>By authority of Education Code Section</i>
Brill, Frederick William	4- 7-23	December 5, 1961	13205
Ford, Barton Clair	7-13-29	February 8, 1962	13206
Holler, Robert L.	4-11-28	January 11, 1962	13205
Huber, John Albert	10- 4-28	February 8, 1962	13202
Kuhn, Martha Louise	7-18-14	February 8, 1962	13202
Lewis, Charlotte Pearl Pease	11- 1-01	January 22, 1962	13205
Markle, Jess Matthew	12-25-06	February 8, 1962	13205
Meacham, William Nickolas	7-18-28	February 8, 1962	13202
Neufeld, Ernest Otto	2-14-26	February 1, 1962	13205
Stowell, Harry E.	5- 9-21	January 25, 1962	13205
Waisath, Stanley George	3-15-26	January 24, 1962	13205

Suspension of Credentials for Public School Service

In accordance with the provisions of Education Code Section 13207, the Board suspended each credential, life diploma, or other certification document heretofore issued to Jean-Reuben de Belfort Urquidi (birth date 1-1-27), because of his conviction of a sex offense as the term is defined in Education Code Section 12912, and such conviction not having become final nor imposition of sentence suspended.

PUBLICATION ON PROBLEMS RELATED TO CALIFORNIA'S GROWTH

California Tomorrow, a nonprofit organization dedicated to arousing public interest in the problems related to California's rapid growth, has recently issued a 64-page publication, *California: Going, Going . . .*, which reviews the need for comprehensive planning in an approach to these problems. The authors are Alfred E. Heller, publisher of the *Nevada County Nugget*, and Samuel E. Wood, formerly an administrator in the United States Department of Agriculture, the Department

of the Interior, and in legislative committee work in California in the field of conservation.

In this publication, the state's struggle to remain beautiful and productive in the face of steady encroachments upon its land, air, and water is attributed to the lack of co-ordinated planning for the needs of a rapidly expanding population. Examples of special interest and single agency planning failures include the needless waste that results from turning productive agricultural land into dreary subdivisions and industrial sites, and the concomitant water contamination, speculation in land values, and scarring of the land with mislocated freeways. The authors deplore the continuous restatement and reanalysis of such problems as well as the reproposals of solutions for them in countless studies, when there is no full-scale state planning policy and program upon which specific corrective action can be based.

The information contained in this publication should be of value to secondary school personnel as a teaching aid in the fields of conservation, civics, and political science. Sample copies may be obtained free from California Tomorrow, 334 Forum Building, Sacramento 14, California. Additional copies are 75 cents each, and prices on orders of ten or more will be provided on request.

Professional Literature

PUBLICATIONS RECEIVED

- County Office Salaries and Miscellaneous Information, 1961-1962.* California Teachers Association Research Bulletin 147, December, 1961. Burlingame, California: California Teachers Association, 1961. Pp. ii + 66.
- Family Living for High Schools: A Semester Course.* Curriculum Bulletin, 1960-61 Series, No. 5. Brooklyn 1, New York: Board of Education of the City of New York, 1961. Pp. viii + 48. \$0.50.
- Growth, Development, and Learning.* Review of Educational Research, Vol. XXXI, No. 5, December, 1961. Washington 6, D.C.: American Educational Research Association, 1961. Pp. 445-572. \$2.00.
- HUTCHINS, CLAYTON D., and STEINHILBER, DOLORES A. *Trends in Financing Public Education, 1929-30 to 1959-60.* OE-22015, Circular No. 666, Office of Education. Washington 25, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Pp. xii + 136. \$1.00.*
- National Defense Graduate Fellowship Program—Title IV, National Defense Education Act: A Report on the First Two Years.* OE-55020, Office of Education. Washington 25, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Pp. 12. \$0.15.*
- SCHWAB, JOSEPH J., and BRANDWEIN, PAUL F. *The Teaching of Science.* (The Inglis and Burton Lectures, 1961). Cambridge, Mass.: Harvard University Press, 1962. Pp. 160. \$3.25.
- Special Education Enrollments in Local Public Schools: A Directory.* A listing of public school systems maintaining special education programs for children in the areas of the blind, partially seeing, deaf, hard of hearing, speech impaired, crippled, special health problems, socially and emotionally maladjusted, mentally gifted, mentally retarded. Prepared by ROMAINE P. MACKIE, HAROLD M. WILLIAMS, and PATRICIA PEACE ROBBINS. OE-35027, Circular No. 673, Office of Education. Washington 25, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Pp. ii + 60. \$0.40.*
- State Plans for Improving Statistical Services.* Submitted by State Education Agencies Under Section 1009, Title X, Public Law 85-864. Compiled by IVAN N. SEIBERT, JERRY N. WADDELL, and LOUISE R. MURPHY. OE-20028, Bulletin 1961, No. 16, Office of Education. Washington 25, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Pp. vi + 174. \$0.65.*
- Summary of Salaries and Salary Schedules in California—1961-1962.* California Teachers Association Research Bulletin 149, January, 1962. Burlingame, California: California Teachers Association, 1962. Pp. iv + 20.
- Typewriting for Secondary Schools: Courses of Study and Syllabi for Junior and Senior High Schools.* Curriculum Bulletin, 1960-61 Series, No. 2. Brooklyn 1, New York: Board of Education of the City of New York, 1961. Pp. vi + 130. \$1.00.
- WARD, BETTY ARNETT. *Literacy and Basic Elementary Education for Adults: A Selected Annotated Bibliography.* OE-13017, Bulletin 1961, No. 19, Office of Education. Washington 25, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Pp. x + 126. \$0.55.*
- WOODWARD, MARTINE V. *Statistics of Public School Adult Education, 1958-59.* OE-13009, Circular No. 660, Office of Education, Washington 25, D.C.: U.S. Department of Health, Education, and Welfare, 1961. Pp. viii + 52. \$0.40.*

* For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.



DIRECTORY OF THE CALIFORNIA STATE DEPARTMENT OF EDUCATION

STATE BOARD OF EDUCATION

Term Expires
January 15

Thomas W. Braden, <i>President</i> , Oceanside.....	1963
Raymond J. Daba, <i>Vice President</i> , Atherton.....	1966
Mrs. Talcott Bates, Carmel.....	1964
Nathaniel S. Colley, Sacramento.....	1964
Dorman I. Commons, Los Angeles.....	1966
Donald M. Hart, Bakersfield.....	1964
Bishop Gerald Kennedy, Los Angeles.....	1965
Mrs. Seymour Mathiesen, Fresno.....	1966
William A. Norris, Los Angeles.....	1963
Ben N. Scott, Harbor City.....	1965

STAFF

(Unless otherwise indicated, all staff members may be reached at the State Education Building, 721 Capitol Avenue, Sacramento 14)

SUPERINTENDENT OF PUBLIC INSTRUCTION

Roy E. Simpson, *Superintendent of Public Instruction and Director of Education*

Jerry J. Keating, *Special Assistant to the Director of Education*

Laurence D. Kearney, *Administrative Adviser*

Mrs. Jane Hood, *Assistant to the Superintendent*, 807 State Building, Los Angeles 12

Roger C. Manroe, *Personnel Officer*

William E. Dresser, *Field Representative*

George E. Hogan, *Deputy Superintendent; Chief, Division of Departmental Administration*

Francis W. Doyle, *Deputy Superintendent; Chief, Division of Special Schools and Services*

Samuel W. Patterson, *Assistant Division Chief*

Richard M. Clowes, *Associate Superintendent; Chief, Division of Instruction*

Ronald W. Cox, *Associate Superintendent; Chief, Division of Public School Administration*

Ray H. Johnson, *Assistant Division Chief*

Wallace W. Hall, *Associate Superintendent; Chief, Division of Higher Education*

ADMINISTRATIVE SERVICES, Bureau of, Marion B. Sloss, *Chief*

ADULT EDUCATION, Bureau of, Stanley E. Sward, *Chief*

AGRICULTURAL EDUCATION, Bureau of, Byron J. McMahon, *Chief*

AUDIO-VISUAL AND SCHOOL LIBRARY EDUCATION, Bureau of, Harry J. Skelly, *Chief*

BLIND, FIELD REHABILITATION SERVICE FOR THE, Bernece McCrary, *Supervising Teacher-Counselor*

BUSINESS EDUCATION, Bureau of, R. C. Van Wagenen, *Chief*

CREDENTIALS OFFICE, _____, *Supervising Credentials Technician*

EDUCATION RESEARCH, Bureau of, Henry W. Magnuson, *Chief*

ELEMENTARY EDUCATION, Bureau of, Helen Heffernan, *Chief*

ELEMENTARY TEXTBOOK DISTRIBUTION, Burriss E. Claypool, *Supervisor*

HEALTH EDUCATION, PHYSICAL EDUCATION, AND RECREATION, Bureau of, C. Carson Conrad, *Chief*

HOMEMAKING EDUCATION, Bureau of, Mrs. Dorothy M. Schnell, *Chief*

INDUSTRIAL EDUCATION, Bureau of, Ernest G. Kramer, *Chief*

JUNIOR COLLEGE EDUCATION, Bureau of, Emil O. Toews, *Chief*

LIBRARIES, Division of, Mrs. Carma R. Leigh, *State Librarian*, Library and Courts Building

NATIONAL DEFENSE EDUCATION ACT ADMINISTRATION, Bureau of, J. Graham Sullivan, *Chief*

PUPIL PERSONNEL SERVICES, Bureau of, Wm. H. McCreary, *Chief*

READJUSTMENT EDUCATION, Bureau of, Herbert E. Summers, *Chief*

SCHOOL APPORTIONMENTS AND REPORTS, Bureau of, Edwin H. Harper, *Chief*

SCHOOL DISTRICT ORGANIZATION, Bureau of, Robert J. Clema, *Chief*

SCHOOL LUNCH PROGRAM, James M. Hemphill, *Supervisor*

SCHOOL PLANNING, Bureau of, Charles D. Gibson, *Chief*

SECONDARY EDUCATION, Bureau of, Frank B. Lindsay, *Chief*

SPECIAL EDUCATION, Bureau of, Charles W. Watson, *Chief*

SUPPLEMENTAL EDUCATION SERVICES, Donald E. Kitch, *Chief*

SURPLUS PROPERTY, STATE EDUCATIONAL AGENCY FOR, William Farrell, *Chief Surplus Property Officer*

TEACHER EDUCATION, Carl A. Larson, *Specialist*

TEACHER RECRUITMENT, Blair E. Hurd, *Co-ordinator*

TEXTBOOKS AND PUBLICATIONS, Bureau of, Ivan R. Waterman, *Chief*

VOCATIONAL EDUCATION, Wesley P. Smith, *State Director*

VOCATIONAL REHABILITATION SERVICE, Andrew Marrin, *Chief*

CALIFORNIA SCHOOLS

Official publication issued monthly
by the California State Department
of Education, Sacramento 14,
California.

•

Entered as second class matter at
the Post Office at Sacramento,
California.

•

RETURN POSTAGE GUARANTEED

